OFFICE OF CLIMATE CHANGE, SUSTAINABILITY AND RESILIENCY
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September 4, 2019

The Honorable Ikaika Anderson
Chair and Presiding Officer
and Members
Honolulu City Council
530 South King Street, Room 202
Honolulu, Hawai'i 96813

Dear Chair Anderson and Councilmembers:

'19SEP 5 AM 8:24 CITY CLERK

SUBJECT: Bill 25 (2019) – Relating to the Adoption of the State Energy Conservation Code

The Office of Climate Change, Sustainability and Resiliency (CCSR) strongly urges passage of Bill 25 (2019), which adopts the State Energy Code, 2015 International Energy Conservation Code (IECC) with added local amendments for electric vehicle (EV) "readiness" and renewable hot water heating.

Updating the City's Energy Code is a foundational and necessary element of the City's commitment to meeting the objectives set forth in the Paris climate agreement and strengthen O'ahu's resilience and sustainability in the face of the global climate crisis. The 2015 IECC addresses numerous energy efficiency improvements that will reduce greenhouse gas (GHG) emissions, alleviate energy burden for vulnerable and disadvantaged communities, and improve long-term affordability for working families and residents.

In 2016, GHG emissions from energy use in residential, commercial, and industrial buildings were the source of 37% of O'ahu's carbon pollution. In order to mitigate and eliminate global climate heating, we must improve the efficiency of our built environment, and as our energy system evolves towards a goal of carbon neutrality by 2045, the 2015 IECC with local amendments is one of the most cost-effective measures the City can implement to achieve this goal. Adoption of the 2015 IECC by itself is estimated to reduce energy use by 33%, and these savings will benefit residents and our island environment for the estimated 50-year life of the new construction.

The new Tropical Climate Zone option, which was developed in close consultation with the Hawai'i State Energy Office, allows builders to choose a

compliance pathway that is more appropriate for our hot and humid tropical environment. This includes a point system that rewards highly-efficient Energy Star appliances; large lanais and other features that take advantage of natural ventilation and tradewinds; ceiling fans in lieu of electric-powered air conditioning; and shading, glazing, and reflective surfaces to keep occupants cool. The Tropical Climate Zone option is estimated to save an additional 48% on energy beyond the 2015 IECC, and in many cases, reduce building construction costs.

In addition, the Administration's Energy Code update is designed to encourage technologies that reduce our energy consumption and reliance on imported fossil fuels. Based on the O'ahu's abundant and consistent sunshine, a solar hot water (SHW) heater is the most economically-efficient and climate-friendly solution to heat water for single family homes. Over the course of 15 years, according to estimates developed from a cross-section of independent, third-party sources and assumptions, a SHW system will avoid as much as 29 metric tons of carbon pollution, or the equivalent of 67 barrels of imported oil per household, compared to a standard electric resistance water heater. It will also result in savings of up to $8,684 per household over a 15 year period relative to standard electric resistance water heaters. This is equal to $320 to $420 more savings per year per household than on-demand tankless gas systems.[1]

An additional independent third-party analysis verifies that SHW systems with either electric resistance or heat pump tanks as back-up produce the lowest overall carbon pollution; and SHW systems with either electric, heat pump, or natural gas tanks as back-up are the least cost options for residents. On-demand tankless gas systems perform the worst from an economic *and* environmental perspective. Moreover, SHW systems offer a more resilient and reliable solution for homeowners, because 50, 80, or 120 gallon water tanks offer valuable thermal energy and water storage capacity in the event of a grid or electricity outage.[2]

Finally, as the City transitions to renewable sources of energy for transportation, it is essential that the energy code supports innovation and investment in infrastructure that will support these goals. Retrofitting existing facilities to accommodate EV charging infrastructure costs 4 to 8 times more than new construction, and this can be cost prohibitive and act as a deterrent to widespread adoption of EVs. The EV "readiness" provisions in this bill, which require 25% of newly constructed parking stalls for multi-family and commercial facilities be made ready for an EV charger, are a critical step towards achieving the City's transportation and climate resilience goals.[3]

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[1] For list of sources and calculations, see: http://bit.ly/30NNt6x.
[2] See *Solar Hot Water Heater Analysis* by The Greenlink Group here: http://bit.ly/2Z74W9x.
[3] For sources and calculations, see *Energy and Electrical Codes Stakeholder Presentation* here: http://bit.ly/2JKuEvt.

While we are moving away from fossil fuels toward a decarbonized economy, we are not doing so nearly fast enough. Steps such as updating energy codes are exactly what we need to do if we're going to keep the global temperature rise below 2°C, as called for in the Paris climate agreement.

Thank you for the opportunity to provide these comments in support of Bill 25 (2019). Should you have any questions, please contact me at 768-2277 or resilientoahu@honolulu.gov.

Sincerely,

J. Stanbro

for Joshua Stanbro
Executive Director and
Chief Resilience Officer

APPROVED:

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